

Abstract

Anticancer Potential of Flavones [†]

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Abstract: Many papers have been written on the anticancer properties of dietary flavonoids, and a range of potential mechanisms of action of flavonoids. However, most dietary flavonoids - notably polyphenolic flavonoids—have very poor ADME properties, and the levels necessary to stop growth of tumour cells cannot be sustained in a human body through dietary intake alone. At present no flavonoid based drugs are clinically used in cancer therapy. Thus, whereas epidemiological and pre-clinical data seem to indicate a high potential for flavonoids, from the point of view of the pharmaceutical industry and drug developers, they are considered poor candidates. The flavones—which constitute a subgroup of the flavonoids—show some structural analogy with oestrogen and are known to interact with human oestrogen receptors, either as agonist or as antagonist. They are classed as phytoestrogens, and may play a role in cancer prevention through a mechanism of action possibly similar to that of the clinically used medication tamoxifen. Flavones are abundantly present in common fruits and vegetables, many of which have been associated with cancer prevention. Their phytoestrogen activity makes that they can assert their biological action at concentrations that are realistically achievable in the human systemic circulation.

Keywords: flavones; phytoestrogen activity; apigenin

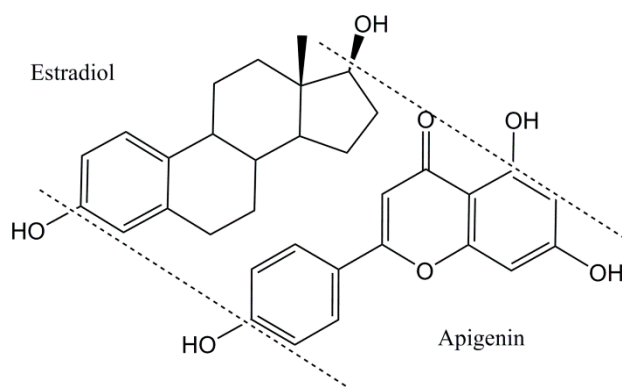


Figure 1. Structural similarity between estradiol and the flavone apigenin.



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